

# PROGRESS OF MEDICAL SCIENCE.

## MEDICINE.

UNDER THE CHARGE OF  
WILLIAM OSLER, M.D.,

REGIUS PROFESSOR OF MEDICINE, OXFORD UNIVERSITY, ENGLAND,

AND

W. S. THAYER, M.D.,

PROFESSOR OF CLINICAL MEDICINE, JOHNS HOPKINS UNIVERSITY, BALTIMORE, MARYLAND.

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Dr. Osborne, who has done so much research in the chemistry of the vegetable proteins, has written a noteworthy monograph on this subject, summarizing with a rare combination of brevity and clarity the work to date of himself, co-workers, and others. The monograph lends itself poorly to a review, but it is to be recommended to all those whom the subject interests, for the book will be found to be a complete compilation with full bibliography of the work published on the vegetable proteins. E. H. G.

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**THE PRINCIPLES OF HYGIENE. A PRACTICAL MANUAL FOR STUDENTS, PHYSICIANS, AND HEALTH OFFICERS. BY D. H. BERGEY, A.M., M.D., Assistant Professor of Bacteriology in the University of Pennsylvania. Third edition; pp. 555; 62 illustrations. Philadelphia: W. B. Saunders Co., 1909.**

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have shown that not only a positive but also a negative test could be relied upon with considerable certainty. Not every cyst fluid is satisfactory for antigen, however, that from the sheep being better than that from man. CHAUFFARD and VINCENT (*Gaz. d. hôp. de Paris*, 1910, lxxxiii 343) report a case in which complement fixation appeared only after the rupture of a cyst into a bronchus. Weinberg has later reported 3 cases in which a positive reaction only appeared after puncture or operation. [It is not impossible that, by using as antigen an alcoholic extract of cyst membrane, as advised by PARVU (*Bull. et Mém. Soc. méd. d. hôp de Paris*, 3<sup>me</sup> s., 1910, xxvii, 371 and 429), some of these negative results might be avoided. A more serious objection is that of K. MEYER (*Berl. klin. Woch.*, 1910, xlvii, 1316), who, after finding that he could obtain complement fixation in the blood of 30 per cent. of hosts of *Tenia saginata* by using extracts of the worm as antigen, found also that echinococcus cases gave less strong but definite reactions to *Tenia saginata* antigen; and that, vice versa, patients with *Tenia saginata* gave positive reactions with echinococcus antigen.—W. S. T.]

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have shown that not only a positive but also a negative test could be relied upon with considerable certainty. Not every cyst fluid is satisfactory for antigen, however, that from the sheep being better than that from man. CHAUFFARD and VINCENT (*Gaz. d. hôp. de Paris*, 1910, lxxxiii 343) report a case in which complement fixation appeared only after the rupture of a cyst into a bronchus. Weinberg has later reported 3 cases in which a positive reaction only appeared after puncture or operation. [It is not impossible that, by using as antigen an alcoholic extract of cyst membrane, as advised by PARVU (*Bull. et Mém. Soc. méd. d. hôp. de Paris*, 3<sup>me</sup> s., 1910, xxvii, 371 and 429), some of these negative results might be avoided. A more serious objection is that of K. MEYER (*Berl. klin. Woch.*, 1910, xlvii, 1316), who, after finding that he could obtain complement fixation in the blood of 30 per cent. of hosts of *Tenia saginata* by using extracts of the worm as antigen, found also that echinococcus cases gave less strong but definite reactions to *Tenia saginata* antigen; and that, vice versa, patients with *Tenia saginata* gave positive reactions with echinococcus antigen.—W. S. T.]

**Apparent Proof that Cammidge's Reaction is not Specific.**—WHIPPLE and KING (*Johns Hopkins Hosp. Bull.*, 1910, xxi, 196) produced acute pancreatitis in dogs by the injection of 4 or 5 c.c. of pig's bile into the large pancreatic duct. All the animals with acute hemorrhagic pancreatitis gave a positive Cammidge test "C" in the urine with one exception: the crystals obtained corresponded in morphology and solubility to those described by Cammidge. Animals poisoned with chloroform showing an extensive necrosis of the liver, as a rule, gave a positive Cammidge reaction. The necrosis of the liver cells was held responsible. Two animals with bronchopneumonia gave a positive reaction. A piece of dog's pneumonic lung was hydrolyzed with 5 per cent. sulphuric acid for two hours, neutralized with barium hydroxide, and the clear filtrate injected into the peritoneum of a dog whose urine was previously negative. A beautiful Cammidge test developed and persisted one week. Operation then showed a normal peritoneum, pancreatic, liver, spleen, and kidney tissue. Human pneumonic lung, treated in the same way, in itself showed the reaction as well as producing it when injected intraperitoneally in a dog. Some perfectly normal female dogs, one after parturition, and some recovering from operations not involving the pancreas, gave the reaction. Whipple and King conclude that the Cammidge reaction is not specific for acute or chronic changes of the pancreas. The disintegration of any cells in the body may give the reaction, or even artificial hydrolysis of any animal tissue may give substances which will appear in the urine and give the characteristic crystals. It is possible that the disintegration of the polymorphonuclear leukocytes is an important factor in the production of this unknown substance.

**The Gas Content and Viscosity of the Blood.**—DETERMANN and WEIL (*Ztschr. f. klin. Med.*, 1910, lxx, 468) contrast the viscosity of blood taken before and after the production of venous stasis with the CO<sub>2</sub> and O<sub>2</sub> content. That CO<sub>2</sub> accumulation raises the viscosity was shown by A. V. Koranyi and Bence. This is in part due to swelling of the corpuscles in venous blood (Limbeck), but not entirely, for Adam

found a rise of viscosity in laked blood when treated with  $\text{CO}_2$ . The Determann viscosimeter was employed. The  $\text{CO}_2$  and  $\text{O}_2$  determinations were made by the Bancroft-Haldane method. The blood to be examined was taken from a vein without any stasis having been produced, and again, after periods of stasis lasting up to ten minutes. The viscosity was found to depend first upon the number of corpuscles. Variations from this parallelism were caused chiefly by variations in the gas content. Other factors played so small a part that, knowing the number of corpuscles, the viscosity estimation is a simple means of getting a rough idea of the gas content of blood.

**The Cutaneous Tricophytin Reaction.**—AMBERG (*Jour. Exper. Med.*, 1910, xii, 435) vaccinated 131 cases with tricophytin after the method of v. Pirquet. Of 13 cases with a history of tricophytosis, 9 gave a positive reaction and 4 were negative. Four cases without a history of infection were positive. Parallel vaccinations were made with tuberculin and bouillon treated exactly like the tuberculin but without any bacteria. The bouillon reactions gave uniformly negative results. The tuberculin vaccinations did not give any results not noted before. Amberg concludes that there is a far-reaching analogy between the cutaneous tricophytin reaction and the cutaneous tuberculin reaction. Both indicate that the organism is the seat of a definite infection or that it has passed through such an infection. Both may persist for a long time after the active disease has come to rest, indicating that the infection has left the organism in a state of altered reactivity—allergy. Since the reaction persists for a long time after the infection has passed, the negative reaction may be of greater value than the positive, excluding the existence of a specific infection.

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**Cystoscopic Examination in Renal Tuberculosis.**—BARRINGER (*Annals of Surgery*, 1910, lii, 238) says that by means of the cystoscopic examination we can almost always tell which kidney is affected in renal tuberculosis. The exception to this is when the tuberculous process is shut off from the kidney pelvis or when the kidney excretes nothing at all through the ureter. The extent of the lesion cannot be accurately determined by the cystoscopic examination, which must in all cases be supplemented by ureteral catheterization or urinary separation. Aside from its rigidity, the most typical changes in the ureteral orifices are, (a) tubercles around the orifice; (b) red granulations; (c) an enlarged, thickened, and ulcerated orifice. A ureter which looks normal and which is contracting and excreting urine, indicates in the large majority of cases a kidney which is excreting normal urine as regards pus and tubercle bacilli, and has a normal functional capacity. In some cases the diagnosis of tuberculosis can be made by means of the cystoscopy alone. This is of considerable value when tubercle bacilli are not found in the urine.

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**Duodenal Ulcer and its Surgical Treatment.**—ZESAS (*Deut. Ztschr. f. Chir.*, 1910, cv, 494) reports three cases of duodenal ulcer operated on by Wilms, who explored the ulcer with the finger inside the duodenum before treating the ulcer itself by folding it in with sutures. The stomach was brought into the abdominal wound, a purse-string suture was placed in the anterior wall of the stomach, an opening made within the suture, the finger introduced through the opening, and the purse string drawn tightly around the finger. The latter was then passed through the pylorus into the duodenum, where in each case it palpated the ulcer close to the pylorus. After the withdrawal of the finger the opening in the stomach wall was closed by the purse-string suture. The ulcer was then folded inward and the wall of the duodenum on both sides of it approximated by suture. In the second case a gastro-enterostomy was performed. All three patients recovered. The method is simple and permits direct treatment of the ulcer, but does not apply to those ulcers so low in the duodenum that they can not be reached by the palpating finger introduced into the stomach. These, however, represent the least frequent of the duodenal ulcers. In small, frequently repeated hemorrhages, radical operation, either by the folding in of the ulcer according to the Wilm's method or its excision, is indicated. The

treatment of greater hemorrhages shows a divergence of opinion. Savariaud recommends in such cases a ligation of the pancreaticoduodenal artery. Gastro-enterostomy has been employed successfully in these as in the cases with smaller hemorrhages. In one of Jaboulay's cases, however, the hemorrhage persisted after the gastro-enterostomy, and the patient died. Moynihan regards it as the ideal method in duodenal hemorrhages. Other observations tend to show its insecurity in the treatment of the hemorrhage or the ulcer itself. Perforation of the ulcer is more frequent than hemorrhage. The mortality is high and the higher the longer the operation is delayed after the occurrence of the perforation. Retroperitoneal abscesses must be opened, posteriorly through the lumbar muscles or from the side, and drained. The prognosis is not so bad as in subphrenic abscesses, which, according to Lieblein, prove fatal whether operated on or not. When there is a duodenal stenosis gastro-enterostomy is the normal operation to be performed. The rule should be that all affections of the stomach threatening the life of the patient, by deficient nourishment, continuous disturbances, hemorrhages, or perforation, call for operation.

**Wounds of the Heart.**—ISELIN (*Deut. Ztschr. f. Chir.*, 1910, cv, 572) reports a case of successful operation for gunshot wound of the heart, in a girl, aged twenty years, who was found unconscious after an attempt at suicide, one hour after which she was brought to the clinic. On the left side of the chest, just internal to the mammary line, in the fourth interspace, was found the wound of entrance. The heart distress was not marked, the pulse was regular, strong, and the rate was about 120. The diagnosis was made of a wound of the chest with a suspicion of a wound of the heart and lungs. Iselin saw her first one and three-quarters hours after the wound had been inflicted. The breathing was then labored and the pulse could not be felt. Operation was performed at once. The wound of entrance which passed through the mammary gland was excised, and an incision was made along the fourth intercostal space. The fifth rib was divided in its bony portion as well as its cartilage near the sternum. On retracting the sides of the wound, the pericardium and pleura were exposed. A strong stream of blood escaped from the upper part of the pericardial sac, which was tensely filled. After opening it widely there was seen in the wall of the anterior ventricle, nearer its base than its apex, a small irregular hole, out of which spurted blood. The heart was brought forward and held by the hand. The wound of entrance and the somewhat larger wound of exit in the posterior wall at the same level were easily closed with catgut sutures, which did not penetrate the whole muscle. Blood continued to flow from both wounds. The radial pulse, which upon the opening of the pericardium and the escape of much fluid blood became again palpable, again disappeared during the introduction of the sutures into the heart. The external wound was closed by pinching and the heart allowed to recover while the gloves were being exchanged. In a few minutes the pulse could be felt. The heart sutures were now holding. The pleura contained fluid and clotted blood, but the hemorrhage did not threaten the patient's life. By lengthening the incision to the anterior axillary line, the collapsed lung was exposed and the wound in it sutured without bringing it forward. The missile was not

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**Autoplastic Transplantation of Bone.** JANEWAY (*Annals of Surgery*, 1910, lii, 217) says that the available methods of filling in deficiencies in bone have never been popular. A woman, now aged forty-two years, twelve years ago had removed from the left arm a tumor about 5 inches long which was found attached to the anterior surface of the ulna by a flattened pedicle. The point of attachment in the ulna was curetted. Recurrence was noticed in one year, the growth now being about 2 inches long. This was extirpated, and one year and three months later another recurrence was excised under local anæsthesia. Again within four months a fourth recurrence was noticed, but the patient neglected treatment until one year and three months after the preceding operation. Through an incision along the posterior border of the ulna and dividing the joined aponeurosis of the extensor and flexor carpi ulnaris, the tumor was removed by resecting a portion of the ulna, five and one-half inches long. A fragment of the same length, three-eighths of an inch wide and one-eighth of an inch thick was now chiselled off from the crest of the tibia, together with its adherent periosteum. This was placed between the two extremities of the ulna remaining, and fastened in place with silver wire. The periosteum of the implanted fragment was also sutured to the periosteum of the remaining portions of the ulna. The wound was now closed with the exception of a small drain at each end. After the first twenty-four hours the drains were removed and a plaster splint applied. Thereafter the wound was dressed on the fourth, seventh, and tenth days, at the end of which time it was healed throughout. At no time was there any elevation of temperature. In two months the patient could freely use her arm for washing clothes at a tub. Microscopic examination showed that the growth was a chondrosarcoma. Radiograms, taken four and fourteen months after the operation, demonstrate the increase in thickness of the implanted fragment and the formation of callus at the upper end by the implanted periosteum, and at the lower end the direct union of the implanted piece with the ulna. If we inquire into the nature of the histological processes which have taken place, we must assume, as the result of the conclusions of research work upon implanted bone and periosteum, that the implanted bone itself had died, but that the periosteum and marrow lived and replaced the old bone with the new. The case illustrates the peculiar adaptability of the tibia (its accessibility and its strength and thickness) to the function of furnishing a suitable bony graft. The radiograms demonstrate

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removed and its mucosa sutured to the skin. The large incision was then closed by three layers of sutures. From the tenth day on the cecum was irrigated through the appendix by means of a Nélaton catheter, the irrigating fluid always bringing out some mucus. On June 18, 1910, the second operation was performed. An incision was made around the ectopic bladder, which was then separated from its bed. The ureters were isolated for about 4 or 5 cm., including as much as possible of the periureteral tissue to preserve its nourishment. A median incision was then made in the abdominal wall. The cecum now lay near the median line adherent to the anterior abdominal wall. It was opened near its lower pole and a piece of the bladder wall about the size of a five mark piece and carrying the ureteral openings was implanted into the opening in the cecum and fixed there by sutures in two layers. The abdominal wound was closed and a tampon placed in the lower angle. A Nélaton catheter was retained in the new bladder and urethra. There were no wound complications. The urine flowed freely through the catheter and the new bladder was irrigated several times daily. On the eighth day the permanent catheter was closed by a stopper and the bladder emptied every two or three hours. The capacity was at first 100 c.c., but increased considerably in the next few days. Four weeks after operation the patient was out of bed and free of fever, but still carrying the catheter. It was necessary to empty the bladder every three or four hours during the day and not at all at night. Its capacity was now 325 c.c. When the bladder is full the urine cannot escape without the introduction of the catheter. The daily quantity of urine excreted is 1000 to 1200 c.c., and it is mixed with mucus but free of albumin.

**Peritonitis following Perforative Appendicitis.**—KRON (*Archiv f. klin. Chir.*, 1910, xcii, 1105) says that although twenty-five years have passed since the first operation for peritonitis, opinions still vary concerning the best treatment. Unity in the terminology of peritonitis is very desirable, since many authors designate different processes in the abdominal cavity by the same name (for example, diffuse peritonitis and general peritonitis), and thus render statistics on the subject less valuable. From infection of the peritoneal cavity after a perforation of an inflamed appendix, we usually find a diffuse pelvic peritonitis, a diffuse unilateral peritonitis, a unilocular or a multilocular peritonitis. The early symptoms are such as to cause delay in reaching a conclusion. Until the present the so-called "muscular defence" is the only generally recognized early symptom. The appearance of the tongue, in connection with the general condition of the patient, will give an important suggestion for the early recognition of the disease. So far as the operative treatment is concerned, experiments on animals and the statistics of many authors with which those of Kron closely agree, speak for the dry method of treatment rather than for irrigation. The dry treatment consists essentially of complete removal of the fluid exudate, removal of the focus of infection, and the prevention of the reaccumulation of the exudate. By the former, much time is saved and the resistance of the organism spared. The success depends upon careful and skilful after-treatment. In the evening a subcutaneous injection of 600 c.c. of saline solution is given, and during the first few days 5 to 10 liters are given. Fowler's position is strongly recommended.

## THERAPEUTICS.

UNDER THE CHARGE OF

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**The Autolysis of Pneumococci and the Effect of the Injection of Autolyzed Pneumococci.**—ROSENOW (*Jour. Amer. Med. Assoc.*, 1910, liv, 1943) states that pneumococci when suspended in sodium chloride solution disintegrate and become Gram-negative. This process has been proved to be a true autolysis and not due to the action of sodium chloride in the solution, or to the solubility of the protoplasm of the pneumococcus in water. He says that further studies of the soluble substances and the autolyzed pneumococci are in progress, but that the following preliminary statements can be made. It seems that by means of autolysis it is possible to separate, at least to a large degree, the toxic from the non-toxic or antigenic parts of the pneumococcus. The part which goes into solution is the toxic portion. It causes peritonitis and leukocytosis in animals; marked local reaction, leukocytosis, and some fever when injected subcutaneously in man. The opsonic curve shows only slight rise. It is impossible to immunize animals to any marked degree by repeated injections. Intravenous injections into rabbits may prove fatal. The injection of the non-toxic and, as it appears, the antigenic portion, the autolyzed pneumococci, on the other hand, causes practically no local reaction, only slight increase in the number of leukocytes, but a marked increase in the immunity curve as measured by the specific increase in pneumococco-opsonin. The usual negative phase is absent. From a number of tests it appears clear that the simultaneous injection of the toxic part interferes to a marked degree with the immunity curve produced by the non-toxic portion. The author tried the injection of autolyzed pneumococci in 25 patients with lobar pneumonia, and believes that it is a valuable aid in the treatment of this disease. In 2 cases of pneumococcic empyema, he also states, it seemed to have a decided beneficial effect, but more tests will be necessary to prove this point.

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**The Treatment of Gastric and Duodenal Ulcer.**—SPRIGGS (*British Med. Jour.*, 1910, 2577, 1216) concludes from a comparison of his series of cases with a similar number of cases treated by other methods: (1) That the Lenhartz method of treatment is not more dangerous than treatment by nutrient and saline enemas, followed by a graduated milk diet. In these particular cases the recurrence of hemorrhage was less frequent and there were no deaths. (2) That the pain suffered by the patient in the course of treatment is less on the Lenhartz diet. (3) The diet gives far more nourishment than can be introduced into the body by nutrient enemas, and is, therefore, more desirable in patients who have frequently been for a long time in a state of semi-starvation, or have suffered a loss of blood or both. (4) That in cases treated by this method rectal injections may be entirely avoided. This is an advantage in a hospital, and a still greater advantage in treating cases at their homes, where rectal injections are not only regarded as extremely un-

pleasant, but are seldom efficiently administered. Gerhardt used the Leube and the Lenhartz methods, and obtained good results with each. This is also Sprigg's experience. The choice may then turn upon convenience, and there is no doubt that the latter method is more convenient. Whenever the Lenhartz method is discussed the objection is put forward that it does not seem wise to put food into the stomach immediately after a hemorrhage. The fact is that such patients do well, and recurrent hemorrhages are less frequent than in patients treated by other methods. Spriggs says that the treatment of duodenal ulcer should be the same as that for gastric ulcer. Patients with duodenal ulcer do well upon a Lenhartz diet. He often combines with it  $\frac{1}{2}$  ounce of olive or almond oil three times a day, following the method introduced by Cohnheim and by Walko, and advocated by Hertz. On this plan  $\frac{1}{2}$  ounce of oil is given every three hours and increased to 1 or 2 ounces. Nothing else is given except water for thirst, until there is no blood in the stools. Cream is then given and the foods of the Lenhartz diet are added gradually, but not the rice. The oil is now reduced to 1 ounce before each meal. He has tried this method thoroughly, and recommends it for patients who will endure it. To others it is exceedingly distasteful and fails on that account. Whenever retching or vomiting is caused the treatment should be altered. If the patient does not respond to one or other form of dietetic treatment, the possibility of the symptoms being due to gallstones must be carefully reconsidered.

**Muscular Rheumatism.**—SCHMIDT (*Med. Klinik*, 1910, vi, 131) believes that the pain of muscular rheumatism is neuralgic in character, and he suggests treating it with injections of physiological salt solution at the painful points. The injection of 5 or 10 c.c. of salt solution into the muscle at the most painful point will frequently relieve the pain, though, of course, it has no effect upon the cause of the pain. In protracted or very acute cases Schmidt advises lumbar puncture which may be followed by spinal anesthesia if necessary. Schmidt has seen lumbar puncture alone cure an obstinate case of myalgia and thinks that a trial is justified in the very severe cases.

**The Treatment of Chorea with Large Doses of Arsenic.**—HASSIN and HERSHFELD (*Med. Record*, 1910, lxxviii, 15) say that arsenic in the form of Fowler's solution remains the most effective method of treatment of chorea, provided it is given in large doses. However, the possibilities of grave complications on the part of the gastrointestinal tract and nervous system renders this method of treatment inapplicable in many cases. Comby maintains that arsenous acid well diluted is much better borne than Fowler's solution. He takes 10 c.c. of a 1 to 1000 solution of arsenous acid, dilutes it with six tablespoonfuls of water and gives one tablespoonful of this mixture in milk every two hours. This is roughly equivalent to  $\frac{1}{4}$  of a grain of arsenous acid. Starting with this initial dose, he increases the amount of the arsenous acid solution by 5 c.c. each day until at the end of a week 40 c.c. are given. Then beginning with the eighth day, he progressively diminishes the daily dose by 5 c.c., so that at the end of the second week the dose is the same as the initial dose. Thus the entire treatment takes two weeks during which time the patient takes about six grains of arsenous acid. There

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**The Treatment of the Hookworm Disease.**—LINDEMAN (*Jour. Amer. Med. Assoc.*, 1910, liv, 1765) gives the following treatment for hookworm disease: The patient should have nothing to eat from noon of the day previous to the administration day of the thymol. On this day and the day following, fat of any kind, milk, cream, butter, bacon, etc., should be avoided. Whiskey, beer, wine, and oils are absolutely interdicted, as all these can dissolve thymol. Early in the evening of the first day sufficient Epsom salts should be given for efficient purgation. It is important that the bowels should be well moved. Early the next day the dose of thymol decided on should be divided into two parts and given one hour apart. It is best administered in cachets triturated with equal parts of milk-sugar, and before using, the cachets should be well softened in water until they are of the consistency of a raw oyster. It is best to put the patient to bed, on the right side. The thymol should be retained for from two to five hours, unless distress or symptoms of intoxication occur. Epsom salts should then be used for flushing the bowels and expelling the drug. The following dosage as outlined by the State Board of Health of Florida is considered safe to use: Under five years of age, up to 8 grains; from five to ten years of age, 8 to 15 grains; from ten to fifteen years of age, 15 to 30 grains; from fifteen to twenty years of age, 30 to 45 grains; from twenty to sixty years of age, 45 to 60 grains; over sixty years of age, 45 grains. In determining the size of the dose the apparent age and the real weight of the child should be considered. The nauseating effects of Epsom salt can be considerably lessened if dissolved in the smallest quantity of warm water possible and swallowed; this to be then followed by a large quantity of any mild fluid, even water. The mixing thus takes place in the stomach instead of in the glass. The patient may begin to eat after the bowels are well moved on this day. It is best that they should eat sparingly and avoid distress from engorgement. The same precautions should be observed on this day regarding fats, oils, alcohol, etc. Once the worm is eradicated, fresh air, sunshine, plenty of water, and proper food are the chief requirements for the treatment of the anemia of hookworm disease. Iron, arsenic, tonics, and ferruginous vegetables are indicated. The patient should be treated at intervals of one, two or three weeks until the stool is free from eggs or parasites. The more debilitated patients should be treated at longer intervals. Betanaphthol

is not so toxic to the parasite as thymol, but has a more toxic action on the kidneys. The anthelmintic properties of turpentine are less than those of thymol; besides turpentine is less desirable because of its ready absorption and liability to produce acute nephritis. Pressed thymol tablets should never be used.

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## PEDIATRICS.

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UNDER THE CHARGE OF

LOUIS STARR, M.D., AND THOMPSON S. WESTCOTT, M.D.,  
OF PHILADELPHIA.

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**Effect on a Syphilitic Child of Injecting the Mother with Ehrlich's "606."**  
—KARL TAEGE (*Munch. med. Woch.*, 1910, lvii, 1725) reports a remarkable recovery from congenital syphilis by injecting the mother with Ehrlich's arsenical compound (dioxy-diamido-arseno-benzol). A woman pregnant at term exhibited mucous patches, condylomas, and many spirochetes. The child when born was extremely pale, weak, and sickly. It did not cry, but lay in an apathetic state and took the breast poorly. No characteristic signs of syphilis appeared until the eighth day, when numerous lesions of pemphigus appeared on the soles of the feet and at the same time syphilitic paronychia on both hands. These lesions tending to spread; the mother was injected in each buttock with 0.3 gram of Ehrlich's "606" in sterile water. On the third day the woman complained of pain, on the fourth day a reddish exanthem appeared on the buttocks, and on the fifth day headache developed. Three days after the injection the lesions began to fade rapidly and the spirochetes disappeared. The child showed increased spread of the lesions for two days following the mother's treatment. The third day it showed rapid clearing up of the symptoms, and by the fifth day the pemphigus and the paronychia had disappeared, the grayish pallor had given place to a healthy tint, the child was no longer apathetic, but cried lustily and took the breast greedily. Ten days later the child was well and still free from symptoms. An explanation of the production of this remarkable result is difficult to find. That the "606" compound was not transmitted to the child through the mother's milk was shown by the fact that this milk contained no trace of the arsenic. Ehrlich himself explains it by the theory that the sudden destruction of the spirochetes sets free a large amount of endotoxins which excite the production of antitoxins, and these latter are then transmitted through the mother's milk to the child with curative effect. However this may be, the sudden clearing up of the symptoms in the child did follow the use of the "606" on the mother, and this result may offer a new and improved method for treating syphilitic infants. Ehrlich especially warns against injecting his remedy directly into small infants, not from any toxic quality in the remedy itself but from the large amount of endotoxin liberated in the child's system from the destruction of the many spirochetes.

have been serious complications resulting from these huge doses of arsenic, and the authors made use of a modification of Comby's method as advocated by Filaloo. Filaloo, for a child of from four to six years of age, begins with a daily initial dose of 2 c.c. of a 1 to 1000 solution of arsenous acid, increasing the amount by 2 c.c. daily for seven days. He then diminishes the daily dose by 2 c.c., so that the entire course of treatment is over a period of two weeks. For older children the initial dose is 4 c.c., which is increased daily by 4 c.c., and after a week is diminished by the same amount. Hassin and Hershfield report excellent results with the use of this method and claim that large doses of arsenic are much better borne by this method than when Fowler's solution is used. They also think that the bye-effects of arsenical treatment can be greatly mitigated by using arsenous acid instead of Fowler's solution.

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—KARL TAEGE (*Munch. med. Woch.*, 1910, lvii, 1725) reports a remarkable recovery from congenital syphilis by injecting the mother with Ehrlich's arsenical compound (dioxy-diamido-arseno-benzol). A woman pregnant at term exhibited mucous patches, condylomas, and many spirochetes. The child when born was extremely pale, weak, and sickly. It did not cry, but lay in an apathetic state and took the breast poorly. No characteristic signs of syphilis appeared until the eighth day, when numerous lesions of pemphigus appeared on the soles of the feet and at the same time syphilitic paronychia on both hands. These lesions tending to spread; the mother was injected in each buttock with 0.3 gram of Ehrlich's "606" in sterile water. On the third day the woman complained of pain, on the fourth day a reddish exanthem appeared on the buttocks, and on the fifth day headache developed. Three days after the injection the lesions began to fade rapidly and the spirochetes disappeared. The child showed increased spread of the lesions for two days following the mother's treatment. The third day it showed rapid clearing up of the symptoms, and by the fifth day the pemphigus and the paronychia had disappeared, the grayish pallor had given place to a healthy tint, the child was no longer apathetic, but cried lustily and took the breast greedily. Ten days later the child was well and still free from symptoms. An explanation of the production of this remarkable result is difficult to find. That the "606" compound was not transmitted to the child through the mother's milk was shown by the fact that this milk contained no trace of the arsenic. Ehrlich himself explains it by the theory that the sudden destruction of the spirochetes sets free a large amount of endotoxins which excite the production of antitoxins, and these latter are then transmitted through the mother's milk to the child with curative effect. However this may be, the sudden clearing up of the symptoms in the child did follow the use of the "606" on the mother, and this result may offer a new and improved method for treating syphilitic infants. Ehrlich especially warns against injecting his remedy directly into small infants, not from any toxic quality in the remedy itself but from the large amount of endotoxin liberated in the child's system from the destruction of the many spirochetes.

have been serious complications resulting from these huge doses of arsenic, and the authors made use of a modification of Comby's method as advocated by Filaloo. Filaloo, for a child of from four to six years of age, begins with a daily initial dose of 2 c.c. of a 1 to 1000 solution of arsenous acid, increasing the amount by 2 c.c. daily for seven days. He then diminishes the daily dose by 2 c.c., so that the entire course of treatment is over a period of two weeks. For older children the initial dose is 4 c.c., which is increased daily by 4 c.c., and after a week is diminished by the same amount. Hassin and Hershfield report excellent results with the use of this method and claim that large doses of arsenic are much better borne by this method than when Fowler's solution is used. They also think that the bye-effects of arsenical treatment can be greatly mitigated by using arsenous acid instead of Fowler's solution.

**The Treatment of the Hookworm Disease.**—LINDEMAN (*Jour. Amer. Med. Assoc.*, 1910, liv, 1765) gives the following treatment for hookworm disease: The patient should have nothing to eat from noon of the day previous to the administration day of the thymol. On this day and the day following, fat of any kind, milk, cream, butter, bacon, etc., should be avoided. Whiskey, beer, wine, and oils are absolutely interdicted, as all these can dissolve thymol. Early in the evening of the first day sufficient Epsom salts should be given for efficient purgation. It is important that the bowels should be well moved. Early the next day the dose of thymol decided on should be divided into two parts and given one hour apart. It is best administered in cachets triturated with equal parts of milk-sugar, and before using, the cachets should be well softened in water until they are of the consistency of a raw oyster. It is best to put the patient to bed, on the right side. The thymol should be retained for from two to five hours, unless distress or symptoms of intoxication occur. Epsom salts should then be used for flushing the bowels and expelling the drug. The following dosage as outlined by the State Board of Health of Florida is considered safe to use: Under five years of age, up to 8 grains; from five to ten years of age, 8 to 15 grains; from ten to fifteen years of age, 15 to 30 grains; from fifteen to twenty years of age, 30 to 45 grains; from twenty to sixty years of age, 45 to 60 grains; over sixty years of age, 45 grains. In determining the size of the dose the apparent age and the real weight of the child should be considered. The nauseating effects of Epsom salt can be considerably lessened if dissolved in the smallest quantity of warm water possible and swallowed; this to be then followed by a large quantity of any mild fluid, even water. The mixing thus takes place in the stomach instead of in the glass. The patient may begin to eat after the bowels are well moved on this day. It is best that they should eat sparingly and avoid distress from engorgement. The same precautions should be observed on this day regarding fats, oils, alcohol, etc. Once the worm is eradicated, fresh air, sunshine, plenty of water, and proper food are the chief requirements for the treatment of the anemia of hookworm disease. Iron, arsenic, tonics, and ferruginous vegetables are indicated. The patient should be treated at intervals of one, two or three weeks until the stool is free from eggs or parasites. The more debilitated patients should be treated at longer intervals. Betanaphthol

is not so toxic to the parasite as thymol, but has a more toxic action on the kidneys. The anthelmintic properties of turpentine are less than those of thymol; besides turpentine is less desirable because of its ready absorption and liability to produce acute nephritis. Pressed thymol tablets should never be used.

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## PEDIATRICS.

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UNDER THE CHARGE OF

LOUIS STARR, M.D., AND THOMPSON S. WESTCOTT, M.D.,  
OF PHILADELPHIA.

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a severe attack of measles, and developed large myxœdematous infiltrations beneath the skin, accompanied by mental dulness. In another case a girl, aged five years, during an attack of mumps, developed an acute enlargement of the thyroid gland, which disappeared in a short time. Immediately following this the body growth ceased, the hair became coarse and lusterless, and mental dulness developed. Thyroid extract was exhibited for a short time until the patient passed from observation. Five years later the child was found to be normal in every way and showed no signs of the disease. The mother stated that the child had remained in the myxœdematous state for two years after the first treatment, and had then suddenly begun to improve naturally and without medication. Stoeltzner can find no cases of traumatic hypothyroidism in literature, but himself reports a circumstantial case in a girl, aged nine years, with fully developed myxœdema, which had followed immediately on a deep lacerating wound of the neck directly over the site of the thyroid gland, occurring two years before. A deep scar an inch long marked the site of the wound. Small doses of thyroid gave marked improvement. Stoeltzner believes that the condition in children which is marked by excessive fatness, flabbiness, turgidity, and pallor, with enlarged tonsils and adenoids, and a dull phlegmatic mentality, is identical with hypothyroidism. In a child exhibiting this condition with rickets, thyroid extract cleared up the former condition nicely, but did not affect the latter. He believes good results will follow the use of thyroid extract in children with the above diathesis. He suggests the examination of such cases by the x-rays to determine whether a condition of bone development characteristic of hypothyroidism may not also be present.

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## OBSTETRICS.

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cannot be considered a permanent pathological lesion. The albuminuria of labor is differentiated from the other by the presence of labor and by the fact that it ceases after parturition. The more abundant the albumin the more gradual is its disappearance. The albuminuria of the puerperal period is the continuation of that of labor, and is never a separate condition. The albuminuria of labor is most pronounced toward the end of parturition, especially in cases of difficult or complicated labor. Circumstances which do not tend to make parturition especially difficult have no influence upon its albuminuria. The sediment of urine taken during labor shows organized material, including cylindroids, so often seen in cases of abundant albuminuria. These cylindroids are not abundant and are to be distinguished from others by the fact that they contain superficial kidney epithelium in abundance, but not the elements which come from the deeper kidney structures. In the normal puerperal period the sediment gradually and completely disappears. The passage of urine during labor is usually within the normal average limit, increasing after the delivery of the foetus, then growing less some hours later, and during the first days after delivery does not reach the average quantity. The specific gravity of the urine after labor is not, as a rule, abnormal; the quantity of albumin does not vary from that of blood serum or of the urine obtained after simple congestion of the kidneys. Increased quantities are sometimes observed after labor and seem to be connected with the congestive condition of the kidneys already described. The rapid disappearance of cylindroids and albuminuria after labor proceeds of itself without any essential alteration in the kidney. It is fair to conclude that an uncomplicated labor following an average normal pregnancy cannot produce definite disease of the kidneys. In some cases among the albuminoid bodies found in the urine of parturient patients there is found a certain albuminoid substance reacting to acetic acid. Its degree of solubility does not seem to be influenced by the condition of the kidneys. In normal circumstances albuminose is not found in the urine of parturient and puerperal patients, nor can there be detected a puerperal peptonuria. The probable causes of the albuminuria seen at labor are violent muscular exercise, cooling of the surface of the body, excitement of the central nervous system, venous stasis, toxins produced by the foetus, wounds of the genital tract during labor, which often affect the urethra and bladder. These causes produce their result by mechanical and chemical means. Under the first class are disturbances of the circulation, greatly increasing arterial tension and traumatism, followed by mild auto-intoxication. It can well be understood that in a patient having kidneys already diseased or with a predisposition to nephritis, pregnancy and labor might result in permanent damage to the kidneys.

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**Gonorrheal Salpingitis: A Histological Study.**—F. B. GURD (*Jour. Med. Research*, 1910, xxiii, 151.) According to AMERSBACH, a positive diagnosis of gonorrhœal salpingitis can be made in those cases presenting infiltration of the thickened folds of mucosa with plasma cells, lymphoblasts, and lymphocytes, in which the cellular infiltration in the wall is made up principally of plasma and lymphoid cells and in which the free pus contains a considerable percentage of lymphoid cells, lymphoblasts, and plasma cells. The author has carefully studied twenty cases of salpingitis, and finds that eighty per cent. were probably of gonorrhœal origin. With proper care and technique, the gonococcus can be cultivated in a large percentage of cases, even in old lesions—35 per cent. in his series. Old pus collections may become the nidus for infection by other organisms, such as the colon bacillus. This organism in all probability enters the already present pyosalpinx by direct passage through the tissue from the frequently adherent sigmoid. The appearance of the tubes examined in the series suggests that the exacerbation of symptoms which occurs periodically in cases of chronic salpingitis, is due to the repeated involvement of the peritoneal covering in an acute inflammatory process. Although it is apparently impossible to speak definitely of the distinctive histological picture of gonorrhœal salpingitis, the great preponderance of plasma cells over the other inflammatory cells, as well as the localization of the lesion chiefly in the mucosa and submucosa, are strongly suggestive of the gonorrhœal origin of an affection. The gonococcus invades the tube by means of continuity of surface, and the histological picture is probably to a great extent dependent upon this fact.

**The Involution of the Corpus Luteum.**—MILLER (*Archiv f. Gynäk.*, 1910, cxc, 263), as the result of his examinations, concludes that the fresh corpus luteum contains no neutral fat; only after the beginning of involution can fat be demonstrated in the lutein cells. Fatty degeneration in the corpus luteum of pregnancy occurs only during the puerperium. The menstrual corpus albicans is due solely to hyaline hypertrophy of the connective-tissue reticulum, with disintegration of the lutein cells which have undergone fatty degeneration. Simple necrosis predominates over fatty degeneration in the retrogression of the corpus luteum of pregnancy. The corpus luteum is penetrated by numerous processes of connective tissue, which later undergo hyaline degeneration. In the second half of pregnancy, or even earlier, the majority of cases show colloid degeneration of the lutein cells, which proves their epithelial rather than connective-tissue origin, since colloid is the product only of epithelial cells. The menstrual corpus luteum usually shows no colloid, or, if present, only as minute, widely scattered drops. Toward the end of pregnancy and during the puerperium the corpus luteum practically always contains lime salts, which are never present in the menstrual corpus luteum. Therefore, the presence of lime salts or considerable colloid is diagnostic of the corpus luteum of pregnancy. One should not confuse true lutein cells with cells containing fat granules, which result from a chronic inflammation, as the author has observed in the ovary, tube, uterus, omentum, and appendix.

**Retroversion of Uteri.**—During the past ten years 304 cases have been operated upon in the Schauta clinic for retrodeviation of the uterus. Vaginal operations were employed in 228 cases, abdominal in 73, and the Alexander-Adams in 3. ADLER (*Monatssch. f. Geburts. u. Gynäk.*, 1910, xxxii, 298) gives in detail the end results of 182 cases, the interval since operation varying from one to ten years, with the exception of five cases of eleven months duration. Uncomplicated retroversion often presents no symptoms, or the patient may complain of sacral backache, dragging sensation, a feeling of pressure in the rectum, and, less frequently, bladder disturbances; the chances of conception are probably lessened. An analysis of his cases gives conclusive evidence that menorrhagia and metrorrhagia are due, not to the malposition of the uterus, but to associated complications, such as metritis, myomas, disease of the adnexa, etc. Treatment is instituted only in the presence of symptoms which can be attributed to the backward displacement. If the uterus is freely movable, it is replaced and held in position temporarily by a pessary. Should the symptoms be relieved and the uterus fail to remain in good position after removal of the pessary, operation is advised. He is strongly opposed to the prolonged use of the pessary. Operation is employed in cases of adherent retrodeviation only after conservative measures have failed. For movable, uncomplicated displacements, the author prefers vaginal fixation of the round ligaments in the region of the urethra, an operation not yet published. Doleris' (Gilliam) operation, which has given ideal results in 33 cases, is employed when the uterus is adherent, when a movable displacement is accompanied by disease of the adnexa or appendix, and in virgins.

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UNDER THE CHARGE OF  
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**Parasitic Culture.**—DAWSON (*Popular Science Monthly*, September, 1910) discusses this subject in an interesting and unique way. In fact, he opens up questions of the greatest importance in both physical and mental development. Starting out with the generally admitted fact that functionless organs are harmful to the body as a whole, he develops the thesis that overtrained organs, whether muscle or nerve, are also harmful. He holds that the athlete is none the stronger on account of the unusual development of his muscular system. On this point he makes the following statement: "It has been observed by physicians that very frequently athletic types of manhood have weak hearts, weak lungs, and weak vital organs generally. Often their health and efficiency in later life are poor; and in not a few cases they break down prematurely. These observations have set both medical men and teachers of physical culture to thinking, and we are now being told that there is danger of overdeveloping the muscular

system; that overdeveloped muscles impose a severe strain upon the rest of the organism; and that all muscular development, unless it is utilized, becomes a tax upon bodily energy, and may give rise to disease. Only very recently a naval officer, who was an athlete while in the Naval Academy, is reported as having failed to meet the required tests of physical efficiency; and his physician ascribes his failure to his earlier muscular development in excess of the needs of his later life. That is to say, "his vitality was reduced through parasitic muscular culture." He also quotes with approval the following from Payot's recent work on the *Education of the Will*: "The qualities of vital resistance are in no way dependent upon muscular strength. A man may be an athlete in a circus, or able to do the heaviest porter's work, and yet have very poor health, while another man who lives in his study may have an iron constitution with mediocre muscular power. Not only have we no reason to aspire to athletic strength, but rather we ought to avoid it; because it can only be developed by violent exercise, and such exercises not only interfere with the regularity of the respiration, and cause very distinct congestion in the veins of the neck and brow, but they are undoubtedly weakening and exhausting. We have come to the conclusion, therefore, that it is not England with her violent system of exercise which we ought to imitate in this connection, but rather Sweden, who has completely given up such ruinous physical efforts for young people in her schools. There the object is to make young people strong and healthy, and they have perceived that excessive physical exercises are more sure to lead to a breakdown than excessive study." In like manner, Dawson holds that the excessive time and effort given to mathematics and the classics overdevelop certain neurons which are but little used in after life, but which must be maintained at the expense of the organism. This interesting article is summarized by its author as follows: (1) It is a law of the biological world that unused organs become parasitic upon the life, draining off the energy of the individual and tending to become diseased. (2) It has been found that physical culture, which leads to the hypertrophy of special muscles, entails a drain upon the general vitality. As in life in general, so in physical education, organs that can perform no adequate function are wasteful of human energy. (3) Experimental psychology is showing that the culture of particular intellectual organs and functions cannot be transformed to other organs and functions, except where there are elements in common. Histology and pathology of the nervous system confirm the conclusions of psychology in this respect. (4) Intellectual culture, not being transferable, must become parasitic and a cause of mental disorganization when it fails of application and usefulness in the life of the individual. Illustrations are to be found in the over-refinements of culture in academic communities, in the nervous instability frequently met with among educated men and women, and in the religious and social vagaries and perversions that crop out in the older and more highly cultivated centres of population. (5) The artificial culture of the secondary schools and colleges in our democratic society, in proportion as it is diffused through larger sections of our population, is likely to develop a cultured proletariat, ill-balanced and inefficient as individuals and a source of danger in our civilization."

turbinate body, and he makes a very small sinuso-nasal opening with his special cutting forceps. Traumatism is said to be reduced to a minimum, and the patient to be laid up for a very few days only.

**Sepsis following Tonsil Operations.**—DEAN (*Laryngoscope*, July, 1910) contributes an elaborate article upon sepsis following operations on the tonsils, and reports a case of death from sepsis, a case of cerebral thrombo-sinusitis, and a case of gangrene of the muscles of the neck, following tonsillectomy.

**Complications of Adenectomy.**—As immediate mishaps, PARREL (*Jour. Laryn.*, August, 1910) mentions burns, and breakage of instruments; and as remote complications, synechiae, adenitis, latero-retropharyngeal inflammations, pulmonary abscesses, and lastly, generalized septicemia. To avoid these he advises the operation in Rose's position, under chloride of ethyl, abstinence from hurry, attention to asepsis, and a strictly surgical technique.

**Submucous Turbinotomy.**—In the numerous cases in which enlargement of the turbinate body is due to the magnitude or to the unusual shape of the bone, ZARNIKO (*Jour. Laryn.*, August, 1910) recommends submucous resection of the turbinal bone instead of the undesirable removal of the entire structure. He has performed over thirty such operations during the last two years, making careful selection of his cases, and is well satisfied with his results. He considers it as a necessary adjunct to many submucous resections of the septum.

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## HYGIENE AND PUBLIC HEALTH.

UNDER THE CHARGE OF

VICTOR C. VAUGHAN, M.D.,

PROFESSOR OF HYGIENE IN THE UNIVERSITY OF MICHIGAN, ANN ARBOR.

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# CONTENTS.

## ORIGINAL ARTICLES.

|                                                                                                                                                                                                                                                         |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>Pleurisy as a Complication and a Sequel of Lobar Pneumonia: Its Diagnosis and Treatment</b> . . . . .                                                                                                                                                | 781 |
| By JAMES M. ANDERS, M.D., LL.D., Professor of Medicine and Clinical Medicine in Medico-Chirurgical College, Philadelphia.                                                                                                                               |     |
| <b>The Use of the Soy Bean as a Food in Diabetes</b> . . . . .                                                                                                                                                                                          | 793 |
| By JULIUS FRIEDENWALD, M.D., Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore, and JOHN RUHRAN, M.D., Professor of Diseases of Children and Therapeutics in the College of Physicians and Surgeons, Baltimore. |     |
| <b>The Role Played in Auscultatory Signs of the Respiratory System by the Sound-conducting Property of the Bony Framework of the Thorax</b> . . . . .                                                                                                   | 803 |
| By JOSEPH H. BARACH, M.D., of Pittsburg.                                                                                                                                                                                                                |     |
| <b>A Clinical Method of Estimating the Coagulation Time of the Blood</b> . . . . .                                                                                                                                                                      | 807 |
| By ROBERT DAWSON RUDOLF, M.D. (Edin.), F.R.C.P. (Lond.), Professor of Therapeutics in the University of Toronto; Senior Assistant Physician to the Toronto General Hospital, Toronto, Canada.                                                           |     |
| <b>The Clinical Significance of Transitory Delirium Cordis</b> . . . . .                                                                                                                                                                                | 815 |
| By GEORGE HENRY FOX, M.D., of Ann Arbor, Michigan.                                                                                                                                                                                                      |     |
| <b>Erythremia or Polycythemia with Enlarged Spleen and Chronic Cyanosis</b> . . . . .                                                                                                                                                                   | 827 |
| By EDWARD C. SEUFERT, A.M., M.D., Professor of Medicine and Clinical Medicine in the Chicago College of Medicine and Surgery, Valparaiso University; Pathologist to St. Mary's of Nazareth Hospital, Chicago.                                           |     |
| <b>Tuberculosis and Menstruation</b> . . . . .                                                                                                                                                                                                          | 835 |
| By DAVID ISRAEL MACHT, M.D., Assistant in Medicine in the Johns Hopkins University; Assistant in Gynecology at the Hebrew Hospital, Baltimore.                                                                                                          |     |
| <b>The Incidence and Significance of Smooth (or Indurative) Atrophy of the Base of the Tongue</b> . . . . .                                                                                                                                             | 859 |
| By DOUGLAS SYMMERS, M.D., Associate Professor of Pathology in the University and Bellevue Hospital Medical College; Assistant Pathologist to the New York Hospital.                                                                                     |     |
| <b>The Syndrome of Sphenopalatine-ganglion Neurosis</b> . . . . .                                                                                                                                                                                       | 868 |
| By GREENFIELD SLUDER, M.D., Clinical Professor of Diseases of the Nose and Throat in Washington University, St. Louis.                                                                                                                                  |     |
| <b>The Clinical Value of the Cammidge Reaction</b> . . . . .                                                                                                                                                                                            | 878 |
| By LYELL C. KENNEY, S.B., M.D., Resident Physician at the German Hospital, Philadelphia.                                                                                                                                                                |     |
| <b>The Determination of Chlorine and the Purin Bodies in Urine</b> . . . . .                                                                                                                                                                            | 883 |
| By ROSCOE W. KING, U. S. Naval Hospital, Las Animas, Colorado.                                                                                                                                                                                          |     |

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# CONTENTS.

## ORIGINAL ARTICLES.

|                                                                                                                                                                                                                                                         |            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>Pleurisy as a Complication and a Sequel of Lobar Pneumonia: Its Diagnosis and Treatment . . . . .</b>                                                                                                                                                | <b>781</b> |
| By JAMES M. ANDERS, M.D., LL.D., Professor of Medicine and Clinical Medicine in Medico-Chirurgical College, Philadelphia.                                                                                                                               |            |
| <b>The Use of the Soy Bean as a Food in Diabetes . . . . .</b>                                                                                                                                                                                          | <b>793</b> |
| By JULIUS FRIEDENWALD, M.D., Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore, and JOHN RUHRAN, M.D., Professor of Diseases of Children and Therapeutics in the College of Physicians and Surgeons, Baltimore. |            |
| <b>The Role Played in Auscultatory Signs of the Respiratory System by the Sound-conducting Property of the Bony Framework of the Thorax . . . . .</b>                                                                                                   | <b>803</b> |
| By JOSEPH H. BARACH, M.D., of Pittsburg.                                                                                                                                                                                                                |            |
| <b>A Clinical Method of Estimating the Coagulation Time of the Blood . . . . .</b>                                                                                                                                                                      | <b>807</b> |
| By ROBERT DAWSON RUDOLF, M.D. (Edin.), F.R.C.P. (Lond.), Professor of Therapeutics in the University of Toronto; Senior Assistant Physician to the Toronto General Hospital, Toronto, Canada.                                                           |            |
| <b>The Clinical Significance of Transitory Delirium Cordis . . . . .</b>                                                                                                                                                                                | <b>815</b> |
| By GEORGE HENRY FOX, M.D., of Ann Arbor, Michigan.                                                                                                                                                                                                      |            |
| <b>Erythremia or Polycythemia with Enlarged Spleen and Chronic Cyanosis . . . . .</b>                                                                                                                                                                   | <b>827</b> |
| By EDWARD C. SEUFERT, A.M., M.D., Professor of Medicine and Clinical Medicine in the Chicago College of Medicine and Surgery, Valparaiso University; Pathologist to St. Mary's of Nazareth Hospital, Chicago.                                           |            |
| <b>Tuberculosis and Menstruation . . . . .</b>                                                                                                                                                                                                          | <b>835</b> |
| By DAVID ISRAEL MACHT, M.D., Assistant in Medicine in the Johns Hopkins University; Assistant in Gynecology at the Hebrew Hospital, Baltimore.                                                                                                          |            |
| <b>The Incidence and Significance of Smooth (or Indurative) Atrophy of the Base of the Tongue . . . . .</b>                                                                                                                                             | <b>859</b> |
| By DOUGLAS SYMMERS, M.D., Associate Professor of Pathology in the University and Bellevue Hospital Medical College; Assistant Pathologist to the New York Hospital.                                                                                     |            |
| <b>The Syndrome of Sphenopalatine-ganglion Neurosis . . . . .</b>                                                                                                                                                                                       | <b>868</b> |
| By GREENFIELD SLUDER, M.D., Clinical Professor of Diseases of the Nose and Throat in Washington University, St. Louis.                                                                                                                                  |            |
| <b>The Clinical Value of the Cammidge Reaction . . . . .</b>                                                                                                                                                                                            | <b>878</b> |
| By LYLE C. KENNEY, S.B., M.D., Resident Physician at the German Hospital, Philadelphia.                                                                                                                                                                 |            |
| <b>The Determination of Chlorine and the Purin Bodies in Urine . . . . .</b>                                                                                                                                                                            | <b>883</b> |
| By ROSCOE W. KING, U. S. Naval Hospital, Las Animas, Colorado.                                                                                                                                                                                          |            |

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# CONTENTS.

## ORIGINAL ARTICLES.

|                                                                                                                                                                                                                                                         |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>Pleurisy as a Complication and a Sequel of Lobar Pneumonia: Its Diagnosis and Treatment</b> . . . . .                                                                                                                                                | 781 |
| By JAMES M. ANDERS, M.D., LL.D., Professor of Medicine and Clinical Medicine in Medico-Chirurgical College, Philadelphia.                                                                                                                               |     |
| <b>The Use of the Soy Bean as a Food in Diabetes</b> . . . . .                                                                                                                                                                                          | 793 |
| By JULIUS FRIEDENWALD, M.D., Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore, and JOHN RUHRAH, M.D., Professor of Diseases of Children and Therapeutics in the College of Physicians and Surgeons, Baltimore. |     |
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| By JOSEPH H. BARACH, M.D., of Pittsburg.                                                                                                                                                                                                                |     |
| <b>A Clinical Method of Estimating the Coagulation Time of the Blood</b> . . . . .                                                                                                                                                                      | 807 |
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| <b>The Clinical Significance of Transitory Delirium Cordis</b> . . . . .                                                                                                                                                                                | 815 |
| By GEORGE HENRY FOX, M.D., of Ann Arbor, Michigan.                                                                                                                                                                                                      |     |
| <b>Erythremia or Polycythemia with Enlarged Spleen and Chronic Cyanosis</b> . . . . .                                                                                                                                                                   | 827 |
| By EDWARD C. SEUFERT, A.M., M.D., Professor of Medicine and Clinical Medicine in the Chicago College of Medicine and Surgery, Valparaiso University; Pathologist to St. Mary's of Nazareth Hospital, Chicago.                                           |     |
| <b>Tuberculosis and Menstruation</b> . . . . .                                                                                                                                                                                                          | 835 |
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| <b>The Incidence and Significance of Smooth (or Indurative) Atrophy of the Base of the Tongue</b> . . . . .                                                                                                                                             | 859 |
| By DOUGLAS SYMMERS, M.D., Associate Professor of Pathology in the University and Bellevue Hospital Medical College; Assistant Pathologist to the New York Hospital.                                                                                     |     |
| <b>The Syndrome of Sphenopalatine-ganglion Neurosis</b> . . . . .                                                                                                                                                                                       | 868 |
| By GREENFIELD SLUDER, M.D., Clinical Professor of Diseases of the Nose and Throat in Washington University, St. Louis.                                                                                                                                  |     |
| <b>The Clinical Value of the Cammidge Reaction</b> . . . . .                                                                                                                                                                                            | 878 |
| By LYLE C. KENNEY, S.B., M.D., Resident Physician at the German Hospital, Philadelphia.                                                                                                                                                                 |     |
| <b>The Determination of Chlorine and the Purin Bodies in Urine</b> . . . . .                                                                                                                                                                            | 883 |
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# CONTENTS.

## ORIGINAL ARTICLES.

|                                                                                                                                                                                                                                                         |     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| <b>Pleurisy as a Complication and a Sequel of Lobar Pneumonia: Its Diagnosis and Treatment</b> . . . . .                                                                                                                                                | 781 |
| By JAMES M. ANDERS, M.D., LL.D., Professor of Medicine and Clinical Medicine in Medico-Chirurgical College, Philadelphia.                                                                                                                               |     |
| <b>The Use of the Soy Bean as a Food in Diabetes</b> . . . . .                                                                                                                                                                                          | 793 |
| By JULIUS FRIEDENWALD, M.D., Professor of Diseases of the Stomach in the College of Physicians and Surgeons, Baltimore, and JOHN RUHRAH, M.D., Professor of Diseases of Children and Therapeutics in the College of Physicians and Surgeons, Baltimore. |     |
| <b>The Role Played in Auscultatory Signs of the Respiratory System by the Sound-conducting Property of the Bony Framework of the Thorax</b> . . . . .                                                                                                   | 803 |
| By JOSEPH H. BARACH, M.D., of Pittsburg.                                                                                                                                                                                                                |     |
| <b>A Clinical Method of Estimating the Coagulation Time of the Blood</b> . . . . .                                                                                                                                                                      | 807 |
| By ROBERT DAWSON RUDOLF, M.D. (Edin.), F.R.C.P. (Lond.), Professor of Therapeutics in the University of Toronto; Senior Assistant Physician to the Toronto General Hospital, Toronto, Canada.                                                           |     |
| <b>The Clinical Significance of Transitory Delirium Cordis</b> . . . . .                                                                                                                                                                                | 815 |
| By GEORGE HENRY FOX, M.D., of Ann Arbor, Michigan.                                                                                                                                                                                                      |     |
| <b>Erythremia or Polycythemia with Enlarged Spleen and Chronic Cyanosis</b> . . . . .                                                                                                                                                                   | 827 |
| By EDWARD C. SEUFERT, A.M., M.D., Professor of Medicine and Clinical Medicine in the Chicago College of Medicine and Surgery, Valparaiso University; Pathologist to St. Mary's of Nazareth Hospital, Chicago.                                           |     |
| <b>Tuberculosis and Menstruation</b> . . . . .                                                                                                                                                                                                          | 835 |
| By DAVID ISRAEL MACHT, M.D., Assistant in Medicine in the Johns Hopkins University; Assistant in Gynecology at the Hebrew Hospital, Baltimore.                                                                                                          |     |
| <b>The Incidence and Significance of Smooth (or Indurative) Atrophy of the Base of the Tongue</b> . . . . .                                                                                                                                             | 859 |
| By DOUGLAS SYMMERS, M.D., Associate Professor of Pathology in the University and Bellevue Hospital Medical College; Assistant Pathologist to the New York Hospital.                                                                                     |     |
| <b>The Syndrome of Sphenopalatine-ganglion Neurosis</b> . . . . .                                                                                                                                                                                       | 868 |
| By GREENFIELD SLUDER, M.D., Clinical Professor of Diseases of the Nose and Throat in Washington University, St. Louis.                                                                                                                                  |     |
| <b>The Clinical Value of the Cammidge Reaction</b> . . . . .                                                                                                                                                                                            | 878 |
| By LYELL C. KENNEY, S.B., M.D., Resident Physician at the German Hospital, Philadelphia.                                                                                                                                                                |     |
| <b>The Determination of Chlorine and the Purin Bodies in Urine</b> . . . . .                                                                                                                                                                            | 883 |
| By ROSCOE W. KING, U. S. Naval Hospital, Las Animas, Colorado.                                                                                                                                                                                          |     |

**The Presence of Negri Bodies in the Saliva.**—GANSLMAYER (*Centrbl. f. Bakteriologie*, 1910, lv, 487) inoculated guinea-pigs and rabbits with forty samples of the submaxillary saliva of rabid dogs, and in thirty-seven of these experiments rabies resulted. In none of these samples of saliva, also in none of twenty samples of parotid saliva, could Negri bodies be detected by the application of the staining methods ordinarily employed in searching for them in nerve tissue.

**The Tropical Sunlight.**—FREER (*Philippine Jour. Sci.*, 1910, v, 1) reports upon the work now in progress in the Bureau of Science on the effects of sunlight in Manila. Much has been written on the subject within recent years, but the problem is a complicated one, and hasty conclusions may be rendered if all factors are not given due consideration. Some years ago it was generally held that the solar spectrum is divisible into three classes of rays. Those of the blue, violet, and ultraviolet regions are designated as actinic and cause chemical changes in the substances upon which they fall. Those in the visible field cause light, while the ultrared produce heat. However, it was shown by Bunsen and Roscoe, as long ago as 1859, that there is no sharp line of demarcation between these sets. One man's vision may take in much more on either side or on both sides than the other, and chemical changes and elevation of temperature are not wholly wanting in the field of vision. Still, three divisions roughly hold good. The intensity of the actinic rays has been studied by their effects upon carbolic acid and aniline, oxalic acid, and other chemical bodies. The coloration of phenol by exposure to sunlight is due to oxidation, and the presence of moisture is not necessary. "Crystals of such pure, dry phenol, when sealed in a tube with pure, dry oxygen and placed in the sunlight in Manila, at a temperature of approximately 30°, color perceptibly after two hours, and the entire mass changes to a deep red liquid after five days." When pure aniline is sealed in a thin glass tube and exposed to the direct sunlight, it darkens and assumes a red shade in less than ten minutes. Methyl alcohol is speedily converted into formaldehyde, and methyl salicylate is decomposed, and the alcohol formed is changed into formaldehyde. These reactions show that tropical sunlight induces chemical changes which either do not take place at all or proceed very slowly in temperate climates. Whether the intensity of the actinic rays is the specially harmful factor in the effect of tropical sunlight on the white man, or not, remains to be determined.

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